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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,238	06/16/2006	John Christopher Rudin	200300817-3	7597

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HEWLETT PACKARD COMPANY  
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INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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NORRIS, JEREMY C

ART UNIT	PAPER NUMBER
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2841

NOTIFICATION DATE	DELIVERY MODE
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04/06/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/564,238	RUDIN, JOHN CHRISTOPHER	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jeremy C. Norris	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,7,11,12,14,17-20,23,24,26,27,30-32,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,7,11,12,14,17-20,23,24,26,27,30-32 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/06</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: specifically reference 116 discussed on page 6 of the instant specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, 11, 12, 14, 17-20, 24, 26, 27, 31, 32, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,159,22 (Lebow).

Lebow discloses, referring primarily to figures 7A-B, a cross-over of first and second separate elongate conductive interconnects, comprising: a first elongate conductive interconnect (30); a second elongate conductive interconnect comprising: a first conductive portion (30) separate from the first elongate conductive interconnect; a second conductive portion (28) separate from the first elongate conductive interconnect and the first conductive portion; and a third electro-deposited metal portion (62) interconnecting the first and second conductive portions; and first insulating material (50) between the first elongate conductive interconnect and the third electro-deposited metal portion of the second elongate interconnect; and a substrate (74), wherein the first insulating material and the third electro-deposited metal portion are positioned between the substrate and the first elongate conductive interconnect [claim 1], wherein the first and second elongate conductive interconnects are formed from electro-deposited metal [claim 2], having a first layer and a second layer, wherein the first elongate conductive interconnect occupies at least the first layer and the second elongate conductive interconnect occupies the first and second layers (as seen in figure 7A) [claim 6], wherein the first layer comprises at least a portion (30) of the first elongate conductive interconnect, the first conductive portion (30), the second conductive portion (28) and second insulating material (50) between the first metal portion and the first elongate conductive interconnect and between the second metal portion and the first elongate conductive interconnect and the second layer comprises first insulating

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material (50) adjacent at least a portion of the first elongate conductive interconnect, and the third interconnecting metal portion (62) [claim 7], wherein the first elongate conductive layer comprises electro-deposited metal [claim 11], wherein the first elongate conductive interconnect is formed from the same material as the first and second portions of the second conductive interconnect [claim 12], wherein the first and second conductive portions comprises electro-deposited metal and each extends in a second direction at an angle to the first direction of elongation of the first elongate conductive member [claim 14], wherein the third metal portion bridges the first insulating material [claim 17], wherein the third metal portion is encapsulated (70) and underlies the first insulating material [claim 18], having a substantially planar surface including substantially planar surface portions of the first and second conductive interconnects [claim 19], further comprising a substrate (72) and insulating adhesive material (72, col. 4, lines 20-30 and 55-65) between the substrate and the first and second conductive interconnects [claim 20].

Additionally, Lebow discloses, a method of crossing a first elongate conductive interconnect and a separate second elongate conductive interconnect in an integrated circuit, comprising: a) forming a first elongate conductive interconnect (30) ; b) forming a first conductive portion (30) separate from the first elongate conductive interconnect; c) forming a second conductive portion (28) separate from the first elongate conductive interconnect; d) depositing first insulating material (50) over at least a portion of the first elongate conductive interconnect; and e) electro-depositing metal (62) to form a third electro-deposited metal portion extending over the first insulating material to

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interconnect the first and second conductive portions and form the second elongate conductive interconnect; and f) transferring the structure formed in steps a) to e) to a substrate (74) [claim 24], wherein step d) involves the selective retention of photo-curable material (col. 4, lines 20-30) [claim 26] wherein, in step a), the first elongate conductive interconnect is formed by electro-deposition of metal; in step b), the first conductive portion of the second elongate conductive interconnect is formed by electro-deposition of metal; and in step c), the second conductive portion of the second elongate conductive interconnect is formed by electro-deposition of metal (col. 4, lines 5-60) [claim 27], wherein step a), b) and c) occur at the same time during a single metal electro-deposition process (col. 4, lines 5-60) [claim 30], wherein the metal electro-deposition process involves masked electrolytic deposition (col. 4, lines 5-60) [claim 31], wherein the mask is second insulator material that is incorporated into the final structure [claim 32]. Furthermore, Lebow discloses a cross-over formed by the method of claim 24 (figure 7B) [claim 36].

Moreover, Lebow discloses, a cross-over of first and second conductive means, comprising: first conductive means (30); second conductive means comprising: a first conductive portion (30) separate from the first conductive means; a second conductive portion (28) separate from the first conductive means and the first conductive portion; and a third electro-deposited metal portion (62) interconnecting the first and second conductive portions; and first insulating means (50) for insulating the first conductive means from the second conductive means wherein the first insulating means directly contacts the third electro-deposited metal portion [claim 37].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lebow.

Lebow discloses the claimed invention as described above except Lebow does not specifically state using the cross over of claim 1 in an active matrix display [claim 23]. However, it is well known in the art to use crossovers in an active matrix display of which fact the Examiner takes Official Notice. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use the crossovers of claim one as disclosed by Lebow in an active matrix display. The motivation for doing so would have been to allow for versatile circuit design without unwanted shorting.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose crossovers:

US 7,288,726 B2            Chang,  
US 7,061,771 B2            Miller,  
US 6,916,996 B2            Kuan et al..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is (571)272-1932. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeremy C. Norris/  
Primary Examiner, Art Unit 2841

Jeremy C. Norris  
Primary Examiner  
Art Unit 2841



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